

5/44

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	24410
<b>Description:</b> 3" Skidtube Light 'I' Beam Extrusion	<b>Part Number:</b>	D2600-5-108
<b>Drawing:</b> D2600 Rev. D1	<b>Qty:</b>	200 240

05.10.03 4/05.10.03


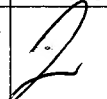
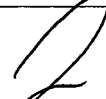


Step	Location	Procedure	By	Date	Qty
1	DC	Issue Traveller	HA	05.10.04	240
2	PG	Issue P/O: <u>2008723</u> a) Extrude as per Dwg D2600 b) Material: 6061-T6 (QQ-A-200/8) c) Minimum yield tensile strength = 35 ksi d) Minimum ultimate tensile strength = 40 ksi e) Minimum elongation = 8% f) Order at 108" long g) Caradon Indalex Tool # MS-18871 h) To be packed per DSK 066 i) <b>Pull test to ASTM standard B221 required.</b> j) Material certification is required	HA	05-10-07	240
3	RG	Inspect for transit damage <b>Ensure certification are attached</b>	CL	05/10/24	264
4	QC6	Inspect dimensions per Dwg D2600 Check Pull test per Dwg D2600 for compliance page attached. <b>Check hardness with Webster tester</b>	2	05.12.15	266
5	ST	Identify and Stock	2	05.12.15	260
6	AC	Cost / part	11	03.12.02	260
7	DC	Close W/O Inspect Level 21	17	05/12/16	260


P10

Rev	Date	Change	Revised By	Approved
A	98.05.08	New Issue		
B	98.10.19	Dwg Rev.	KS	
C	99.06.22	Re-format	DM	
D	00.02.01	Removed second pull test	EC	
E	01.03.29	Changed part# to -108	EC	
F	02.09.10	Added DSK 066	KJ	RF

RELEASED  
02/09/17 RF211  
301488P.O. Ref 0352  
05/12/20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			
05-12-15	4	4 pieces found with transport damage or fork lift damage Also Tensile strength is supposed to be 410 - Actual is 39660	 05-12-15	4 parts scrap damage over Tol. place in quarantine. Tensile strength acceptable As per e-mail from Shepherd.	 05-12-15	 05-12-15	 05-12-15	 05-12-15

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA:  Date: 05/12/16

NOTE: Date &amp; initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_



DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>KE</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2600	REV. D SHEET 1 OF 5
DATE 98.08.20		TITLE EXTRUSION	SCALE 1:1
A	97.01.21	NEW ISSUE	
B	97.09.09	CHANGE MATERIAL SPEC.	
C	98.04.16	ADD D2600-3, UPDATE D2600-1 WIDTH, ADD DIE NO.	
D	98.08.20	INCREASE MIN. UTS TO 40 KSI	
DI	01.04.17	ADD PART NUMBERS & DIE NUMBERS <i>+ GP</i>	

**RELEASED**  
98.08.25 DS

### GENERAL NOTES

1. MATERIAL: 6061-T6 (QQ-A-200/8)

MINIMUM YIELD TENSILE STRENGTH = 35 ksi  
MINIMUM ULTIMATE TENSILE STRENGTH = 40 ksi  
MINIMUM ELONGATION = 8 %

A SAMPLE FROM EACH BATCH WILL BE PULL TESTED TO ASTM STANDARD B221 BY AN APPROVED TESTING FACILITY TO ENSURE THAT THE BATCH MEETS THE ABOVE MINIMUM MECHANICAL PROPERTIES.

2. BREAK ALL SHARP CORNERS 0.010 MAX.
3. NO TOOLING MARKS.
4. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
5. ALL DIMENSIONS ARE IN INCHES.

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WITHOUT NOTICE

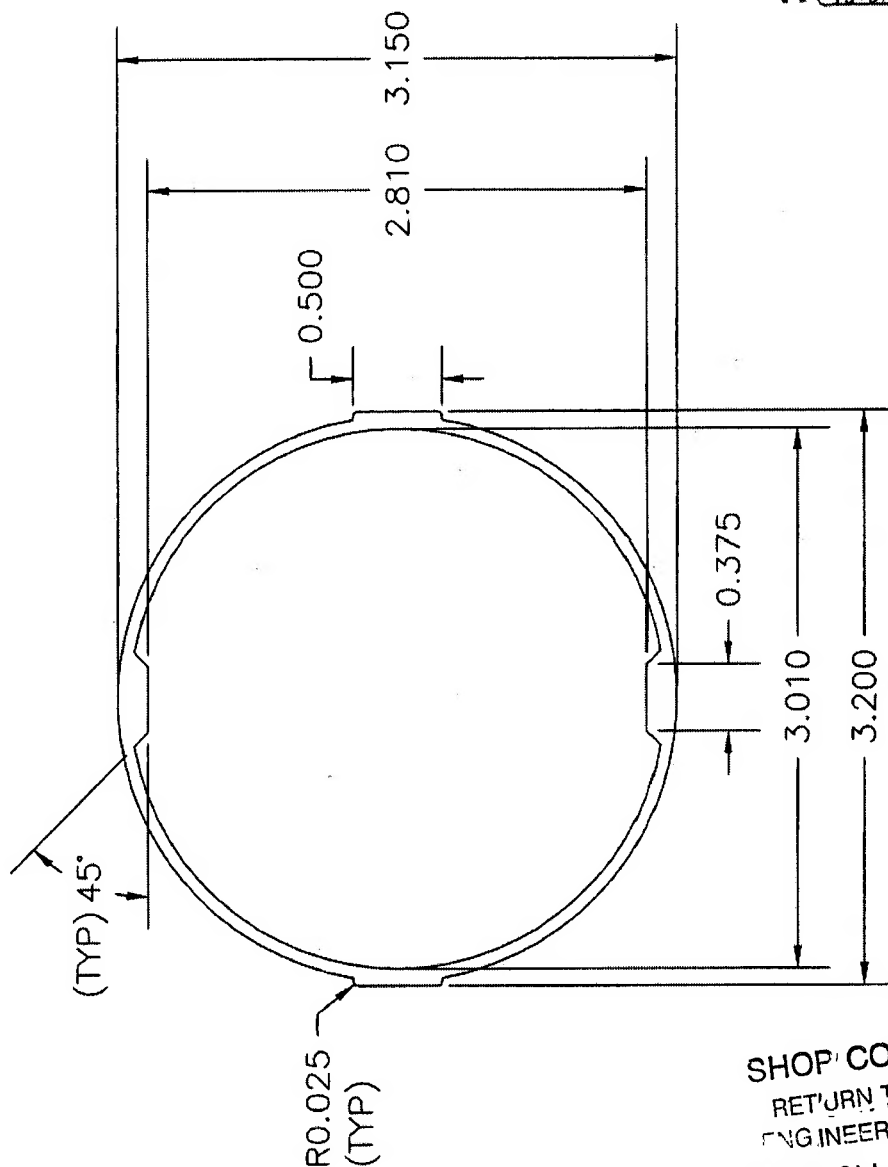
WORK ORDER

NO. 24410



DESIGN <i>DD</i>	DRAWN BY <i>DD</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>KE</i>	APPROVED <i>KE</i>	DRAWING NO. D2600	REV. 0 SHEET 2 OF 5
DATE 98.08.20		TITLE EXTRUSION	SCALE 1:1

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98.8.25 DS



D2600-1

MANUFACTURED WITH CARADON INDALOX DIE # MH-18870  
OR BON L DIE # 897121 (PREFERRED CHOICE)  
PART NUMBER IS D2600-1-XXX WHERE XXX IS CUT LENGTH IN INCHES (EG. D2600-1-160 IS 16.0" LONG)

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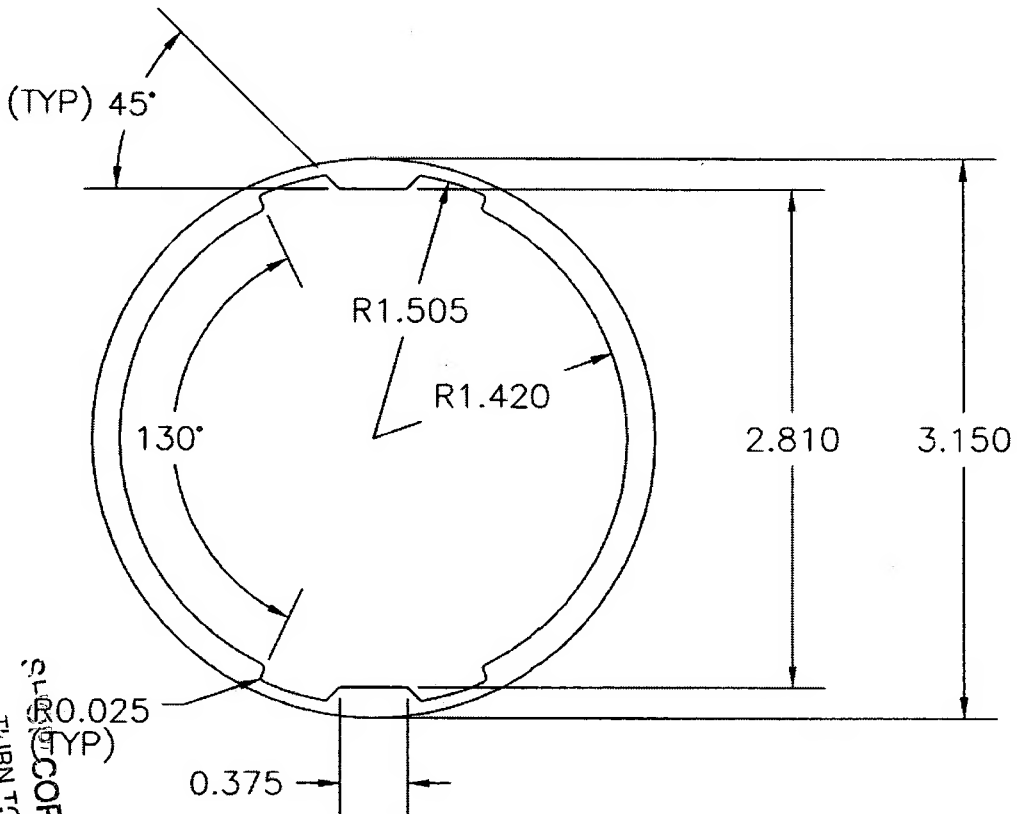
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WORK ORDER  
NO. 24410

**DART**



DESIGN	DART	DRAWN BY	DART	DART AEROSPACE LTD HAMKESBURY, ONTARIO, CANADA	
CHECKED	KE	APPROVED	KE	DRAWING NO.	REV. D
DATE	98.08.20			D2600	SHEET 3 OF 5
				TITLE	SCALE
				EXTRUSION	1:1



**RELEASED**  
98.8.25 DS

D2600-3

MANUFACTURED WITH CARADON INDALEX DIE # MH-18859

OR BON L DIE # 897122 (PREFERRED CHOICE)

PART NUMBER IS D2600-3-XXX WHERE XXX IS CUT LENGTH IN INCHES (EG. D2600-3-120 IS 120" LONG)

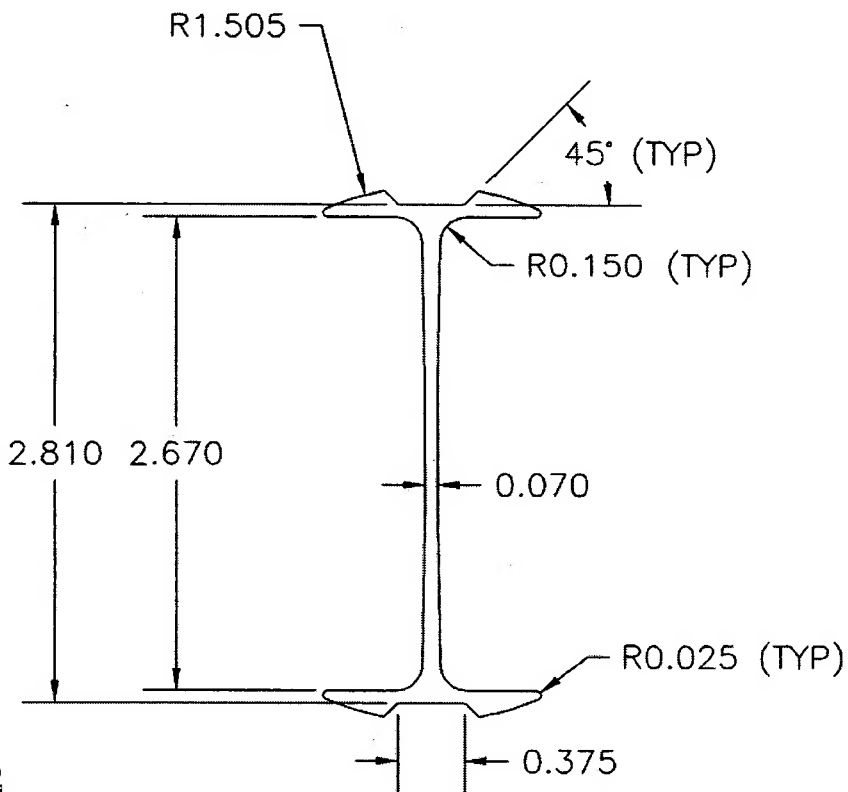


NO. 24410  
WORK ORDER  
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REVISION  
NOTICE  
COPY



DESIGN	DRAWN BY	DART AEROSPACE LTD HAMKESBURT, ONTARIO, CANADA	
CHECKED <i>KE</i>	APPROVED <i>KE</i>	DRAWING NO. D2600	REV. D
DATE 98.08.20		TITLE EXTRUSION	SHEET 4 OF 5
			SCALE 1:1

RELEASED  
98.8.25. bs



D2600-5

MANUFACTURED WITH CARADON INDALEX DIE # MS-18871  
PART NUMBER IS D2600-5-XXX WHERE XXX IS CUT LENGTH IN INCHES  
(EG. D2600-5-108 IS 108" LONG)



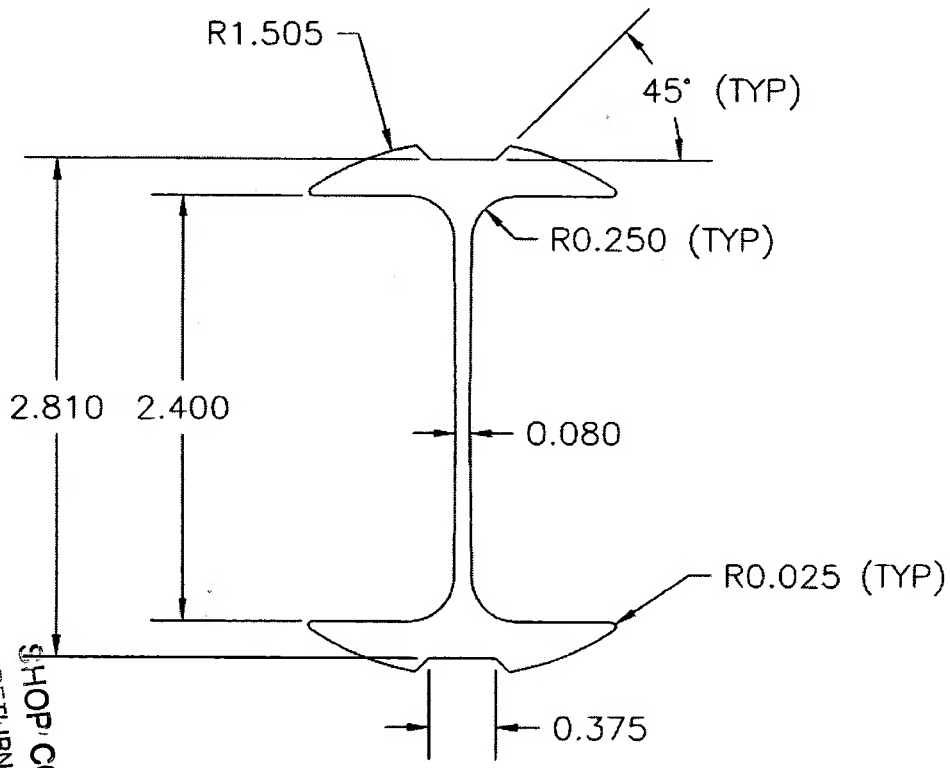
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WORK ORDER  
NO. 24410

**DART**



DESIGN	DRAWN BY	DART AEROSPACE LTD HAMKESBURY, ONTARIO, CANADA	
CHECKED <i>KE</i>	APPROVED <i>JS</i>	DRAWING NO. D2600	REV. D
DATE 98.08.20	TITLE EXTRUSION	SHEET 5 OF 5	
		SCALE 1:1	

**RELEASED**  
98.8.25 DS



D2600-7

MANUFACTURED WITH CARADON INDALEX DIE # MS-18872  
PART NUMBER IS D2600-7-XXX WHERE XXX IS CUT LENGTH IN INCHES  
(EG. D2600-7-125 IS 125" LONG)

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TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 24410



100



# Job Costing Report

Dart Aerospace Ltd.  
Hawkesbury

Oct 03, 2005  
11:23 am

Work Order No : 0024410  
Project Name : D2600-5-108  
Project For : WK544  
Work Order Type : Main  
Main WO Number :  
House Part Number : D2600-5-108  
Description : Extrusion 'I Beam' thin  
Manufactured : Yes  
Amount Req'd : 200  
Amount Done : 0  
Start Date : 10-03-05  
Est Finish Date : 11-05-05  
Act Finish Date :  
Drawings Req'd : No  
Ok for Approval :  
Approval Rec'd :

Department Code:  
Burden Flags : NNNNNNNN  
WO Status : Open  
Invoice State : Not Invoiced  
Invoice Date :  
Invoice Number :  
Invoice Amount : 0.00  
Order Entry No :  
OE Value : 0.00  
Est Mark Up : 0.000%  
Actual Mark Up : 0.000%  
\$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost :	0.00	0.00	0.00	0.00	0.00
Engineering Hours :	0.00	0.00	0.00		
Engineering Cost :	0.00	0.00	0.00	0.00	0.00
Production Hours :	0.00	0.00	0.00		
Production Cost :	0.00	0.00	0.00	0.00	0.00
Packaging Hours :	0.00	0.00	0.00		
Packaging Cost :	0.00	0.00	0.00	0.00	0.00
OverHead Hours :	0.00	0.00	0.00		
OverHead Cost :	0.00	0.00	0.00	0.00	0.00
CNC Hours :	0.00	0.00	0.00		
CNC :	0.00	0.00	0.00	0.00	0.00
Misc. Hours :	0.00	0.00	0.00		
Misc. :	0.00	0.00	0.00	0.00	0.00
Burden :	0.00	0.00	0.00		
Total Cost :	0.00	0.00	0.00		
Mark up :	0.000	0.000			
Selling Cost :	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done :	0.00	0.00
Profits/(Loss) :	0.00	0.00



325 rue Avro  
Pointe-Claire QC H9R 5W3  
Téléphone (514) 697-5120  
Fax-simule (514) 694-8310

## Rapport des propriétés mécaniques Mechanical Properties Test Report

Client / Customer : DART AEROSPACE LTD  
Adresse / Address : 1270 ABERDEEN STREET  
HAWKESBURY ONT,  
K6A 1K7

# commande Indalex / Indalex order # : 5100862  
# bon de commande / Purchase order # : 2008783  
# de matrice / Die # : MS 18871 Description : D-2600-5 Light Duty Web  
Alliage & trempage / Alloy & temper : 6061 T6  
# de coulée / Cast # : 36354  
# de contrôle / Control # : 132-1

Composition chimique typique / Typical chemical composition :

Si:0.72-0.76/ Fe:0.20-0.29/ Cu:0.24-0.28/ Mn:0.05-0.10/ Mg:0.84-0.88/ Cr:0.05-0.09/ Zn:0.08max / Ti:0.04max

Dureté Rockwell E / Rockwell E Hardness : 91 HRE


	Min.requis Min.required	Résultat actuel Actual results
Contrainte élastique Yield stress (psi)	35 000	37273
Tension ultime Ultimate stress (psi)	38 000	39660
% elongation dans 2"	8	9
% elongation in 2"		

Nous certifions que le matériel fourni rencontre les exigences chimiques telles qu'annoncées par l'Association de l'Aluminium ainsi que les exigences de nos procédures de contrôle de qualité.

We hereby certify that the material supplied meets the chemical properties as published by the Aluminum Association, and requirements of our quality control procedures.

Sincèrement vôtre,  
Yours truly,

date : 2005-10-18

  
Bruno Morency  
Technicien de la qualité  
Quality technician

Indalex Limited

**Jason Murdoch**

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**From:** David Shepherd [davids@dartaero.com]  
**Sent:** November 15, 2005 6:22 PM  
**To:** Jason Murdoch  
**Cc:** Linda Lacelle; Bill Beckett  
**Subject:** D2600-5-108 B24410

Jason,

You sent me a fax showing me that the UTS for the subject material is 39,660 psi instead of 40,000 psi per the drawing.

The critical extrusion on the D2600 drawing is the D2600-1 extrusion.

Therefore, I think this material is acceptable because it is so close to the 40,000 psi.

However, I think it should be pointed out to the vendor that we didn't get what we asked for.

David